



United States
Department of
Agriculture

Forest
Service



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Decision Notice and Finding of No Significant Impact

Flank Vegetation and Fuels Management Project and Forest Plan Amendment

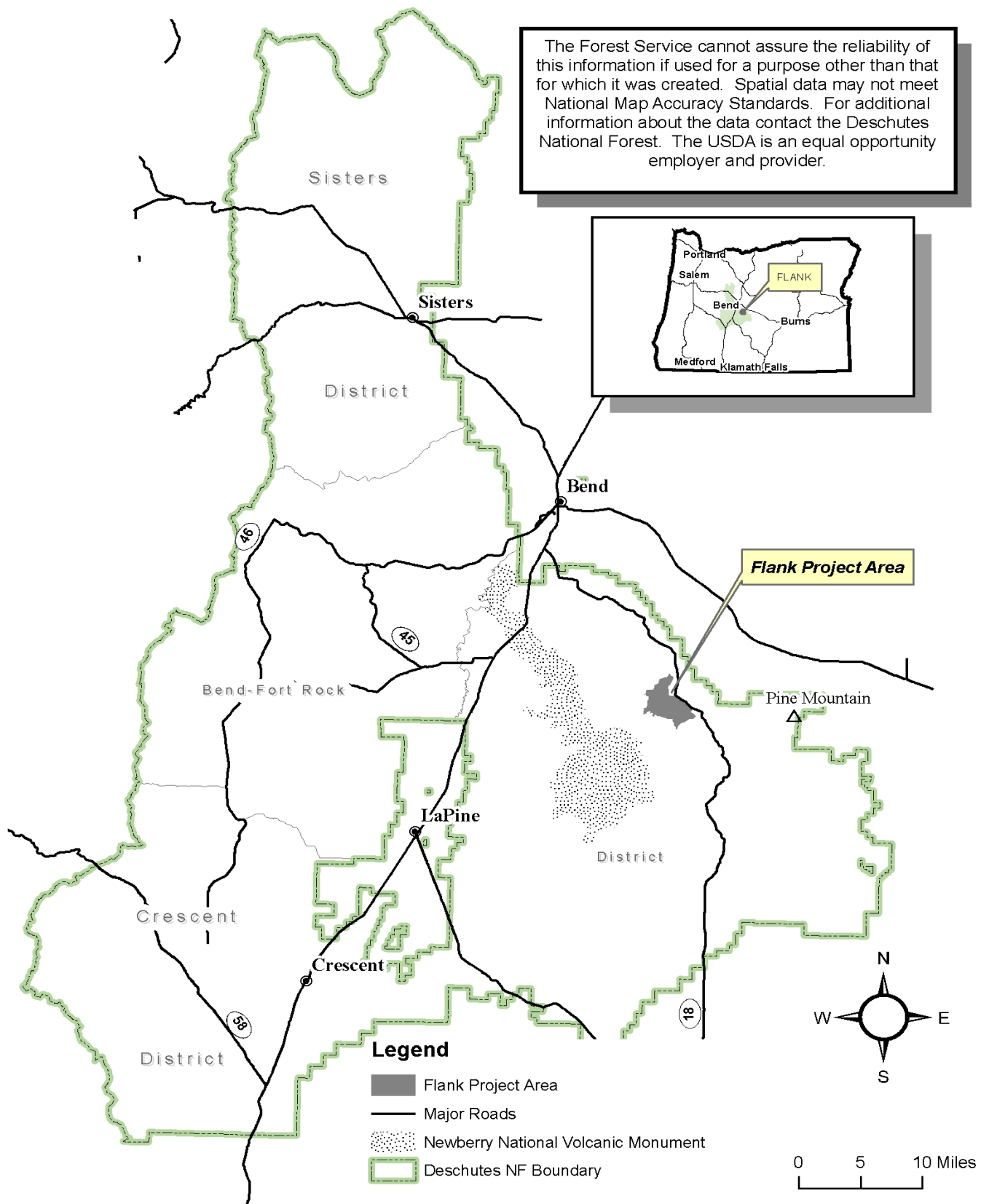
**Bend/Ft. Rock Ranger District, Deschutes National Forest
Deschutes County, Oregon**

**Legal Description: Township (T) 20 South (S) Range (R) 13 East (E)
sections 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36 as well as
Township (T) 20 South (S) Range (R) 14 East (E) sections 19, 29, 30,
31, and 32, Willamette Meridian**

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Introduction and Background

This Decision Notice documents my decision and rationale for the selection of Alternative 3, as described in the Environmental Assessment for the Flank Vegetation and Fuels Management Project. The Flank project will implement thinning, overstory removal, and fuels reduction across 5,616 acres on the northeast flank of Newberry Caldera on the Deschutes National Forest.

Historically the Flank project area was dominated by large, open ponderosa pine stands. Decades of fire suppression and harvest practices (initially harvested in the 1920s and 30s) have left the area dominated by densely stocked 80-year old blackbark ponderosa pine. These uniform stands lack structural diversity and are experiencing slow annual growth, making them susceptible to bark beetle attack and uncharacteristically intense stand replacement fires. Additionally, some stands have a large component of dead trees or mistletoe-infected overstory trees that are infecting the understory.

This project responds to the purpose and need of improving resiliency to large-scale disturbance events such as insect, disease, and wildfire and moving watersheds toward historic conditions by reducing forest vegetation density and addressing tree species composition. It also responds to the need to contribute forest products, including commercial and small tree material, and to provide job opportunities for local and regional economies.

Decision

It is my decision to select Alternative 3 in its entirety, including the associated connected actions described in the Environmental Assessment (EA). Specifics of this decision, including a description of the activities, are attached to this Decision Notice: Appendix A of this Decision lists project design and mitigation; Appendix B lists specific treatments by unit; Appendix C shows treatment maps.

Decision Summary

This Alternative will include timber harvest on about 5,615 acres, producing roughly 14.2 MMBF. Some of these treatments overlap and occur on the same acre. Therefore total treatment acres cannot be obtained by adding commercial thinning and overstory removal treatments.

The following activities will be implemented with Alternative 3, separately or in combination:

- Commercial thinning on 5,268 acres
- Overstory removal on 251 acres
- Pre-commercial thinning on 2,440 acres
- Conduct ladder fuel reduction on 149 acres
- Lop and scatter fuels on 1,131 acres
- Conduct machine shrub treatment (mowing) on 289 acres
- Hand pile 5 acres
- Machine pile 1,272 acres
- Underburn 4,705 acres

Associated activities include:

- Construct or reutilize 13.5 miles of new temporary spur roads (roads will be closed after use)
- Maintain 21.5 miles of existing system roads
- Perform reconstruction activities on 24.6 miles of existing system roads
- Decommission 3.6 miles of existing system roads by subsoiling
- Close 6.1 miles of existing system roads
- Subsoil 19-39 acres of compacted skid trails, temporary roads and landings

Forest Plan Amendment: My decision includes a site-specific non-significant amendment to the Deschutes Forest Plan. The current thermal cover in deer winter range is at approximately 17% (1,948 acres), below the Forest Plan recommendation of 30%. This amendment would allow treatment of thermal cover in deer winter range, resulting in a slight reduction of thermal cover to 14% (1,628 acres) under Alternative 3. Although this amendment would allow a further reduction in thermal cover, conditions should improve in the long-term for bigger, bushier trees, providing better quality thermal cover in the future. These treatments will also decrease insect infestation and decrease the risk of a stand replacement fire. Another large fire within the general area could widely affect thermal cover for big game. Additional details of the amendment can be found in the Flank Environmental Assessment (EA pp 173, 175-176).

This plan amendment has been prepared under the 2000 rule as amended with transition wording at 36 CFR 219.35 that allows the use of the 1982 rule procedures. [See 65 FR 67568, Nov. 9, 2000, as amended at 66 FR 1865, Jan. 10, 2001; 66 FR 27554, May 17, 2001; 67 FR 35434, May 20, 2002; 68 FR 53297, Sept. 10, 2003; 69 FR 58057, Sept. 29, 2004]. The 1982 rule and the 2000 rule as amended are available online at http://www.fs.fed.us/emc/nfma/2000_planning_rule.html.

Reasons for the Decision

My decision to select Alternative 3 was made by considering how well the Alternative meets the purpose and need and how the Alternative responds to the issues. This decision is based on my review of the analysis presented in the Flank Environmental Assessment and the comments received from the public during the 30-day comment period. In selecting Alternative 3, I carefully reviewed disclosures in Chapter 3 of the EA. The analysis discloses predicted environmental consequences of the actions, including effects to management indicator species and other wildlife, benefits to forest health, reductions in wildfire risk, compliance with air quality regulations, and maintenance of soil productivity. My conclusions are based on a review of the entire project record, which includes a thorough review of relevant scientific information, and a consideration of responsible opposing views as described in the attached Appendix D-Response to Comments. The following narratives go into detail on my reasons for the decision.

Response of Alternative 3 to the Purpose and Need

There is a need to improve resiliency to large-scale disturbance events such as insect, disease, and wildfire and move watersheds toward historic conditions by reducing forest vegetation density and addressing tree species composition.

The EA explains that most stands are above the upper management zone (UMZ). The UMZ is the density at which a suppressed class of trees begins to develop. In pine plant associations, this is the level beyond which there is imminent risk of catastrophic loss of overstory trees to bark beetles. Nearly 70% of the area has some mortality caused by mountain pine beetle or a higher than historic percentage of lodgepole pine stems, thus putting these acres at risk for bark beetle attack due to slower growth rates, higher stocking of lodgepole pine and reduced vigor (EA pp 74). The analysis shows that all of the units will benefit from thinning by moving them to or below the UMZ. The entire unit, except for areas of wildlife retention will experience a reduction in density as part of Alternative 3 (EA pp 78).

Alternative 3 will move toward HRV by providing a greater potential for stands to become open, ponderosa pine stands. Currently there are no known stands in late old structure where historically it is estimated there was greater than 75% of the landscape in late old structure. The project consists mostly of thinning dense multi-layered stands giving 80% of the project area the potential to develop into open large pine structure in the future. Density reduction would keep the 10-year growth average above 1.5 inches per decade.

The potential for mortality from mistletoe and wildfire events will be reduced as a result of Alternative 3. The EA explains how thinning would improve survival rates in the event of a wildfire by promoting growth of large trees and raising the residual average diameters based on research by Agee 2005 and modeling cited in USFS 2009 (EA pp 76). Mistletoe spread will be limited by removing heavily infected trees, increasing stand spacing, and reducing the two layer component of stands will reduce the vertical spread of mistletoe (EA pp 76).

There is a need to contribute forest products, including commercial and small tree material, to provide job opportunities for local and regional economies.

Alternative 3 will produce about 14.2 million board feet of timber products and support an estimated 136 timber industry jobs (EA pp 178). The sale may be logged over multiple years. The estimated employment income as a result of this project is \$4,326,000.

Response of Alternative 3 to the Key Issues

In response to the proposed action, and based on feedback from the public, three key issues were identified and were used to develop Alternative 3:

Key Issue #1: Stand Level Structural Diversity

Issue Statement:

Public comments expressed an interest in establishing diversity and complexity at the stand level by using skips and gaps to create a “gappy and clumpy” appearance. There was interest in explicitly leaving certain patches untreated for long periods of time so that large snags could be recruited at near natural levels in those areas. Some felt the scale of patches in variable density thinning regimes is important and should vary from single tree fall events to larger patches. Input included an interest in creating five acre openings across ten percent of the stands to break up stand homogeneity and create future cover patches for mule deer. Comments expressed concern with the low levels of snags currently present in the watershed and suggested elimination of salvage harvest from the proposed action.

In addition, one group suggested retaining all trees with old-growth characteristics even if they are less than 21” dbh. Because they felt these trees have important habitat and human values and could die through natural processes providing some ecologically valuable snags and downed wood.

Response of Alternative 3 to Stand Level Structural Diversity:

Alternative 3 responds best to the issue of stand-level structural diversity by creating added skips and gaps and retaining trees with old growth characteristics (EA pp 14). Alternative 3 eliminated 857 acres of salvage harvest that was included in the proposed action (EA pp 54).

An estimated 20% of the Flank area is serving as natural gaps and skips. Stand treatments will result in an additional 20-25% of the area being developed into gaps and skips. With 40-45% of the project area having gaps post treatment, the areas where we need to explicitly create gaps is limited. In the 400 acre post fledgling area (PFA), Alternative 3 includes explicit gap creation in several units. These units cover 154 acres. Gaps will be created on 10%, or about 15 acres, of the area. Explicit gap creation size would range up to a maximum of 2 acres each. Alternative 3 also explicitly retains trees when they exhibit all three old growth characteristic as described by Van Pelt, 2008. These characteristics include:

- Orange bark with plates 3 times wider than the darker fissures;
- Few, if any, branches are present below the main crown, no noticeable knots;
- Rounded crowns

No snags will be removed with Alternative 3. In the short-term, lodgepole pine snags, primarily smaller diameter, will be maintained at higher levels under Alternative 3 due to the lack of salvage logging. Over the long-term, the increased growth in thinned stands will provide larger green tree replacements and eventually larger snags which are currently lacking on the landscape. Although the existing smaller snags are fairly short-term and many will fall within 10 years, while they stand they will provide habitat for species that require high snag densities. Black-backed woodpeckers (BBWO) are the most likely to benefit, although other species, such as long-legged myotis, brown creeper pygmy nuthatches, and other cavity nesting birds are associated with high snag densities. BBWO have been observed utilizing the existing snags within the project area, and under Alternative 3 currently occupied habitat would be maintained. The benefit to this species will be fairly short-term, however, as BBWO are typically only present for the first few years following heavy tree mortality. Three-toed woodpeckers often utilize areas vacated by BBWO, and could utilize these snags for several additional years. Once these snags begin to fall, the levels of coarse woody material will increase. Coarse woody material is beneficial to a variety of species, particularly small mammals which are prey for many raptor species.

Key Issue #2: Goshawk Management***Issue Statement:***

Public comments suggested best available science indicates that goshawks are most closely associated with dense forests and there is not evidence that goshawks benefit from increased room to fly in thinned stands. Respondents favored not treating in areas near goshawk sites.

Response of Alternative 3 to Goshawk Management:

Alternative 3 responds best to the needs for Goshawks by managing the PFA in accordance with best available science (EA pp 14). It creates greater heterogeneity while still managing toward the HRV. Benefits to goshawk include improved nest sites due to increased tree growth rates, improved vegetative conditions and diversity yielding better forage, and reduced risk of stand replacement fires.

Alternative 3 proposes a suite of various treatments in the PFA, which includes 400 acres around known goshawk sites. Alternative 3 proposes to manage a northern goshawk PFA

around an active nest site in a manner similar to that described in the latest paper by Youtz et al (2008). Habitat with a range of tree sizes and densities both within and between stands is the main objective found in the recommendations. In addition, each of the four stand prescriptions will include 10% untreated areas. These prescriptions intend to thin the stands to levels where bark beetle mortality would not develop as a common problem for more than 10 years, while still maintaining suitable goshawk habitat. A replacement nest stand in unit 54 will be left untreated under this Alternative.

Key Issue #3: Road Decommissioning and Maintenance of Existing Travel Routes

Issue Statement:

Some public comments encouraged decommissioning of unneeded portions of roads as part of an integrated project design. Roads were of concern because they serve as a potential source for weeds, may channelize water, and can cause erosion. Some members of the public also expressed concerns with previous road maintenance activities in the area and suggested that a particular road in the project area was not repaired adequately or returned to its pre-logging condition when it was used before. Comments also suggested that implementation of this project use alternate haul routes such as the 23/25 route or Forest Road 18.

Response of Alternative 3 to Road Decommissioning and Maintenance of Existing Travel Routes:

Alternative 3 responds best to the issue of road decommissioning and maintenance of existing travel routes by including proposals for decommissioning and closure of roads that are no longer needed for project activities (EA pp 15).

Alternative 3 will implement a plan for closing and decommissioning nearly 10 miles roads that are not essential to continued timber management operations. Given the location of these roads, they should improve big game habitat effectiveness in summer range by providing larger blocks of core areas for security and solitude (EA pp 125). There will be a net benefit by slightly increasing habitat effectiveness in summer and winter range, a net benefit by increasing forage (grasses and forbs) and providing better quality browse through prescribed burning, and a net benefit of decreasing the risk of a catastrophic fire (EA pp 126).

Temporary roads will be used to minimize negative soil impacts and will be located in advance of purchaser operations by Forest Service personnel. Maintenance and reconstruction would be performed on existing roads to allow timber haul. This project will provide funding to improve current conditions on roughly 25 miles of road needed for rock and timber haul and includes maintenance on roads to align them with required standards for timber haul. Road engineers working with timber sale appraisers determine most efficient and economical haul routes for timber at the time the sale contracts are written. Damage caused by purchasers hauling on forest roads must be repaired at the purchaser's expense prior to completion of the timber sale.

Other Alternatives Analyzed

In addition to the Selected Alternative, I considered one other action alternative along with the No Action Alternative.

Alternative 1—No Action

Under the No Action Alternative, current management plans would continue to guide management of the project area. No timber harvest treatments would be implemented. Forested stands would continue to develop under existing conditions and current stand density levels and growth trends would continue. None of the post-harvest projects listed in the EA nor the road closures, maintenance, or reconstruction would be implemented under the No Action Alternative.

I did not select No Action because it does not meet the purpose and need identified for the project. One of the primary purposes of the project is to improve resiliency to large-scale disturbance events such as insect, disease, and wildfire and move watersheds toward historic conditions by reducing forest vegetation density and addressing tree species composition. No Action does not meet this purpose because it does not address the overstocked, unhealthy condition of stands in the project area.

Expected consequences of the No Action Alternative include: beetle risk will remain the same and beetle mortality will accelerate (EA pp 77). The number of large overstory trees would be reduced by bark beetle activity and increase the time required to develop large tree structure. Diameter growth will remain slow (less than 1 inch per year) over the next decade (EA pp 77).

Under the No Action Alternative, lodgepole pine and ponderosa pine mortality would continue through natural selection, beetle kill, disease, fire and competition. Fuel loadings would increase from shrub accumulation and falling lodgepole pine trees (EA pp 89). If a wildfire event were to occur in the Flank area the towns of Bend and Redmond could experience heavy smoke (EA pp 91). Development of snags greater than 21 inches would be slow. Snags would benefit those species that use smaller diameter trees for nesting and foraging opportunities. Species needing large snags would continue to have limited populations in the area. Even after 30 years there would be less than 1 snag/acre over 21 inches without treatment (EA pp 112). Alternative 1 would not meet the objective for promoting large tree growth (EA pp 113).

Without treatments to improve forest health, wildfires are likely to occur in the future potentially causing a variety of effects to forest resources. These disturbance events may lead to: loss of existing mule deer hiding and thermal cover (EA pp 123), diminished goshawk habitat that only exists in small isolated pockets (EA pp 127), loss of habitat potential for sharp-shinned and Cooper's hawks (EA pp 129), suitable red-tailed hawk nest trees may become more sporadic across the landscape (EA pp 130), habitat development for species associated with mature structure, open conditions or old-growth would be unlikely to develop (EA pp 133), localized detrimental changes to soil chemical, physical and biological properties on up to 5% of the burned landscape would occur (EA pp 142), and vegetation conditions for livestock would not be beneficial in the long run as foreign climax communities outside the historic range of variability would continue to develop (EA pp 159).

Alternative 2 – Proposed Action

Alternative 2, the original Proposed Action, would treat 5,688 acres of forested stands in the Flank project area, including 251 acres of overstory removal and 857 acres of salvage harvest. The expected timber volume from this Alternative is 14.5 MMBF.

Alternative 2 utilizes salvage harvest on 857 acres. Snag levels in the surrounding watersheds fall below Forest Plan standards and guidelines, even though within the stands

to be treated snag levels are above the level required by the Eastside Screens. This treatment was excluded from the Selected Alternative 3.

Fuel treatments in Alternative 2 are similar to those in Alternative 3. There are more acres of machine piling and more acres of underburning as salvaged stands would have fuel loadings low enough to allow treatment and reintroduction of fire without adverse affects to residual trees. The overview of Alternatives (EA pp 55-64) shows a comparison of fuel treatments among the three Alternatives.

Alternative 2 would include roughly 100 more acres of pre-commercial thinning than Alternative 3 due to the inclusion of one stand as an Alternative goshawk nest site. This stand would not be thinned under Alternative 3. Alternative 2 would close 2.8 miles of road and decommission 4.0 miles of road. Alternative 2 does not include special provisions to retain trees under 21 inches that exhibit old growth characteristics.

Gaps in Alternative 2 and 3 would be created as a result of silvicultural prescriptions, opening up the stands naturally where small pockets of the stands are occupied solely by lodgepole pine. By removing all lodgepole in these areas, small openings would be created; however, additional explicit gaps would not be created with this alternative as in Alternative 3.

Alternative 2 was not selected because it does not respond to the issue of road decommissioning and maintenance, and does not create added skips and gaps or retain trees with old-growth characteristics. Also, Alternative 2 also does not manage in the goshawk post-fledgling area according to the best available science. As discussed under "Reasons for the Decision" I found Alternative 3 better responds to the public issues that arose during planning and sufficiently meets the purpose and need.

Public Involvement

Preparation of the EA followed the procedures outlined at 40 CFR 1501.7, 40 CFR 1503, and 36 CFR 215. The scoping letters for Flank were mailed to tribal contacts including Confederated Tribes of the Warm Springs, Burns Paiute Tribe, and the Klamath Tribes on July 22, 2009. No comments were received from the tribes. The scoping letters for Flank were mailed to all other interested parties on July 27, 2009. The proposal has appeared in the Schedule of Proposed Actions (SOPA) since July 1, 2009. The Deschutes National Forest publishes the SOPA quarterly on the web. Comments were received from the following organizations: Cascadia Wildlands, Deschutes County, Department of Fish and Wildlife, Oregon Wild, and Oregon Chapter Sierra Club. Keith and Janet Nash and Gordon Baker submitted comments as well. Comments were used to develop issues and alternatives. All correspondence and full text of letters received are in the analysis file for the Flank project at the Bend/Fort Rock Ranger District office.

A 30-day public comment period was provided on the EA beginning with a legal notice in *The Bulletin* on June 30, 2010. Notification of the availability of the EA and comment period was sent to the project mailing list of individuals, organizations, and tribes. Substantive comments were received from Oregon Wild and Oregon Department of Fish and Wildlife. The IDT team and I carefully considered all of the comments submitted. Comments were used to clarify and improve some portions of the EA. The summary of the comments and the response to those comments is located in Appendix D of this Decision Notice.

Finding of No Significant Impact

I reviewed the EA and associated appendices and believe there is adequate information within these documents to provide a reasoned choice of action. I am fully aware of adverse effects that cannot be avoided and believe the risks are outweighed by the benefits. Implementing the Selected Alternative will cause no unacceptable cumulative impact to any resource.

After considering the environmental effects described in the EA, I have determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27); therefore, an environmental impact statement will not be prepared. I base my finding on the following:

Context: The Selected Alternative is limited in geographic context (40 CFR 1508.27(a)). The area of proposed activity is relatively small when considered in a watershed perspective. There is not an expectation that significant indirect effects will occur with the implementation of Alternative 3. Likewise, cumulative effects are expected to be negligible and are documented in the EA in Chapter 3.

Intensity: Ten elements of impact intensity identified in 40 CFR 1508.27b have been considered in assessing the potential significance of project effects. They are as follows:

- 1) My finding of no significant environmental effects is not biased by the beneficial effects of the action. The beneficial and adverse impacts are disclosed in the EA and no significant effects on the human environment have been identified. No significant irreversible or irretrievable commitments of resources, such as loss of soil productivity, water quality, wildlife habitat, or recreational opportunities, will result from this project. As described in chapter 3 (EA pp 65-185) of the Flank environmental assessment, adverse effects and the reasons they are not expected to be significant include:

Water Quality – There would be no effects to water resources, riparian areas, floodplains, or wetlands from implementing the Selected Alternative. The project would be consistent with the Clean Water Act as there would be no effects to Oregon Department of Environmental Quality 303(d) listed water bodies (EA p 187). This is because there is no water in the project area.

Fisheries – There would be no effects to fisheries or Essential Fish Habitat from implementing the Selected Alternative (EA p 187). This is because there is no water in the project area.

Threatened/Endangered, and Sensitive Wildlife Species – No habitat exists within or adjacent to the project area for the Northern Spotted Owl, Oregon Spotted Frog or Pacific Fisher (EA p 93). There would be no effects to habitat for these species or their habitat (EA p).

Management Indicator Species (MIS) – The project area provides habitat for woodpeckers, northern goshawk, Cooper's hawk, sharp-shinned hawk, red-tailed hawk, and Townsend's big-eared bat. There will be either no effect or benefits to most species of woodpecker. There is currently limited habitat within the project area for black-backed woodpeckers and three-toed woodpeckers. Treatments are intended to retain heterogeneity so that smaller patches of habitat will become available to these species over time. Goshawk populations will benefit from creation of more suitable habitat and improved resiliency to stand replacement fire events (EA pp 115-130). As discussed in the EA, nesting habitat for Cooper's hawks and sharp-shinned hawks will be reduced as stands are thinned and tree canopies become more open; however wildlife retention

patches distributed throughout the project area will continue to provide nest stands, and the remaining habitat will be more stable and resilient to stand replacing wildfire events. Ten percent of the area will be left in wildlife leave areas and will provide some dense stands with closed canopies (EA pp 128). Red-tailed hawks will benefit from improved foraging habitat and more prey. Nest tree development (trees >21") will be accelerated (EA pp 129). Townsend's big-eared bat may use the area for foraging and will benefit from the accelerated development of late old structure (EA pp 136).

Although there would be short-term impacts on big game thermal cover, thermal cover levels would move towards desired conditions for thermal cover and HRV conditions in the long-term (EA pp 123). Project design criteria would move browse toward more optimum conditions as recommended by the LRMP (EA pp 124).

The analysis determined the project would not contribute to a downward trend in any MIS population viability at the Forest Level.

Botanical Species – No direct or indirect effects have been identified for threatened, endangered and sensitive species because TES plant species do not exist within the project (EA pp 154).

Soils – there are no major soils related concerns (EA pp 151). Alternative 3 will meet LRMP standards for soil productivity and comply with the recommended management guidelines that ensure adequate retention of snags, coarse woody debris, and fine organic matter following both harvest and fuels treatments (EA pp 150).

Range – Implementation of treatment activities under Alternative 3 will in general benefit rangelands by increasing forage over the long run (EA pp 163).

Recreation – The Selected Alternative minimally impacts trails and trail use and would not create any cumulative effects to recreation (EA pp 163).

Heritage Resources – There will be no direct and indirect effects to known heritage sites as a result of activities described in Alternative 3 (EA pp 171).

- 2) Significant effects to public health and safety are not anticipated to result from implementation of Alternative 3 because implementation incorporates appropriate safety measures as required by OSHA smoke management will occur to ensure compliance with the Clean Air Act and these types of projects have not been shown to produce significant health or safety effects in the past (EA pp 92).
- 3) The supporting documentation located in the EA and project record provides sufficient information to determine that this project will not significantly affect any known unique characteristics of the geographic area such as park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas such as historic or cultural resources. There are no park lands or prime farmlands in the project area. There are no wetlands within the project area.
- 4) The project is unlikely to have highly controversial effects. The nature of potential effects on the human environment from Alternative 3 is well established and not likely to be highly controversial in a scientific context. While the public may perceive some aspect of the project (e.g., temporary road construction) to be controversial, there is no known scientific controversy over the impacts of the decision.
- 5) The project effects do not entail uncertain, unique, or unknown risks. The effects on the human environment from Alternative 3 are not uncertain and do not involve unique or unknown risks. All proposed actions are standard practices that have been previously implemented with known cause and effect relationships.

- 6) The action will not establish a precedent for future actions with significant effects, because it conforms to all existing Forest Plan direction, or the Forest Plan has been amended (EA pp 179-182) and is applicable only to the project area.
- 7) No potentially significant adverse cumulative effects of the project have been identified (EA pp 81-82, 92, 93, 96, 100, 114, 118, 119, 125, 127, 130, 133-134, 136, 150-152, 155, 161, 163, 172, 178).
- 8) This action will not cause loss or destruction of significant scientific, cultural, or historical resources. An appropriate review has been conducted by this undertaking. Both previously known and unknown significant cultural sites discovered in field surveys will be avoided. Because cultural resources will not be affected by this action there will be no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (EA pp 172).
- 9) The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. A Biological Evaluation has been prepared with a finding that Alternative 3 has no effect to any threatened and endangered species as a result of activities associated with this project.
- 10) The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA, (pages 178-184). The action is consistent with the Deschutes National Forest Land and Resource Management Plan (EA, page 183-187).

Legal Requirements and Policy

In reviewing the EA and actions associated with Alternative 3, I have concluded that my decision is consistent with the following laws and requirements:

The National Environmental Policy Act (NEPA)

NEPA establishes the format and content requirements of environmental analysis and documentation as well as requirements for public involvement and disclosure. The entire process of preparing this environmental assessment was undertaken to comply with NEPA.

The National Forest Management Act (NFMA)

I find this decision to be consistent with the long term management objectives as discussed in the Deschutes Land and Resource Management Plan as amended, except as described below. All other Forest Plan direction, including from the Regional Forester's Forest Plan Amendment #2 (Eastside Screens) has been adhered to and incorporated into the project's design. The EA (section 3.15 Compliance with Direction and Regulation) provides an assessment of the project's relationship to Forest-wide and management area standards and guidelines of the Forest Plan.

Changes to the LRMP that are not significant: One aspect of the Selected Alternative is not consistent with the standards and guidelines in the LRMP (see page 3 of this DN). The Selected Alternative includes a site-specific amendment to the Deer Habitat objective which states "Ideally, cover and forage should be in close proximity for optimum use by big game, with cover making up 40 percent of the land area." This amendment is described and analyzed in the EA on pages 179 to 182. It will allow thinning, mowing, and underburning across the project area that is already below the 40% objective. Based on the analysis in the

EA, I find the Forest Plan amendment to be non-significant because it does not alter the long-term multiple-use goals and objectives for the Forest Plan, is a minor change in a standard considering the size of the landscape, and provides an opportunity for contributing to achievement of the long-term goals and objectives of the LRMP.

The amendment would not have an impact on the goal for General Forest, and it does provide for activities that contribute to meeting the General Forest objectives including controlling stocking levels; maintaining satisfactory growth rates; protecting stands from insects, disease, and damage. The proposed amendment would also not have any significant impact to the long-term goals or objectives of Deer Habitat which includes managing vegetation to provide optimum habitat considering the inherent productivity of the land. The amendment allows a short-term reduction in thermal cover with an expectation that vegetative conditions that provide thermal cover would improve in the long-term. There are no other factors or unique circumstances affecting the Forest Plan from this amendment. The direction in the Eastside Screens has been adhered to and incorporated into the project's design.

I find the Selected Alternative to be consistent with the requirements of the National Forest Management Act implementing regulations; specifically:

Silvicultural Practices: In Alternative 3, there is no timber harvest on lands classified as unsuitable for timber production. Alternative 3 is consistent with 36 CFR 219.27(c)(1).

Vegetative Manipulation/Management Requirements: Alternative 3 is consistent with the seven management requirements from 36 CFR 219.27 and the vegetation requirements from 36 CFR 219.27(b).

The Preservation of American Antiquities Act of June 1906 and the National Historic Preservation Act: The Oregon State Historic Preservation Officer (SHPO)

A cultural resource inventory has been completed for the project area. The Deschutes National Forest completed the "Project Review for Heritage Resources under the Terms of the 2004 Programmatic Agreement" with the Oregon State Historic Preservation Officer (SHPO). The activities in the Selected Alternative have been designed to have no effect to cultural resource sites through both protection and avoidance. A finding of Historic Properties Avoided has been made for this project. The project is compliant with the SHPO regulations.

The Endangered Species Act of 1973, as amended

A Biological Evaluation (BE) was prepared to address Regionally Sensitive species. There are no threatened or endangered species or habitats in the project area. As a result, no consultation with the USFWS was needed. Implementation of proposed activities will have no effect to threatened or endangered plant or animal species (EA pp 94)

The Clean Water Act, 1982 and 303(d)

The Selected Alternative will comply with the Clean Water Act. This Act establishes a non-degradation policy for all federally proposed projects. Because there are no permanent or seasonal streams within or adjacent to the project area, and because there is no potential for rain or snowmelt to provide runoff directly into a permanent water source, the Selected Alternative meets anti-degradation standards (EA pp 187).

The Clean Air Act

The Selected Alternative will comply with the Clean Air Act. The Act prescribes air quality to be regulated by each individual state. The Forest Service will follow directions of the Oregon State Forester in conducting prescribed burning in order to achieve strict compliance with all aspects of the Clean Air Act and adherence to the Oregon Smoke Management Plan (EA pp 92).

Civil Rights and Environmental Justice

Executive Order 12898 on environmental justice requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low income populations. The analysis focuses on potential effects from the project to minority populations, disabled persons, and low-income groups.

After evaluating the discussion in the EA on pages 172-178, I have determined that there would be no discernable impacts from any of the Alternatives on Native Americans, women, other minorities, or the Civil Rights of any American citizen.

Implementation

Implementation will likely begin in the summer of 2011. If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

Minor changes may be needed during implementation to better meet on-site resource management and protection objectives (such as minor adjustments to unit boundaries during final layout). Many of these minor changes will not present sufficient potential impacts to require any specific documentation or action to comply with applicable laws. In determining whether and what kind of further NEPA action is required, I will consider the criteria to supplement an existing Environmental Analysis in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular, whether the proposed change is a substantial change to the intent of the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

Appeal Rights

This decision is subject to appeal pursuant to 36 CFR 215. The 45-day appeal period begins the day following the date the legal notice of this decision is published in *The Bulletin*, Bend, Oregon. Only individuals or organizations that submitted comments during the 30-day comment period, may appeal. Notices of appeal must meet the requirements of 36 CFR 215.14. Appeals can be submitted in several forms, but must be received by the Appeal Deciding Officer, Regional Forester, within 45 days from the date of publication of notice of the decision in *The Bulletin*, Bend, OR. Appeals may be:

- 1) Mailed to: *Appeal Deciding Officer, Pacific Northwest Region, USDA Forest Service, Attn. 1570 Appeals, PO Box 3623, Portland, OR 97208-3623;*
- 2) Emailed to: *appeals-pacificnorthwest-regional-office@fs.fed.us*. Please put APPEAL and the project Name in the subject line. Electronic appeals must be submitted as part of an actual e-mail message, or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to addresses other than the ones listed above or in formats other than those listed above or containing viruses will be rejected. It is the responsibility of the appellant to confirm receipt of appeals submitted by electronic mail. For electronically mailed appeals, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of the receipt of the appeal, it is the sender's responsibility to ensure timely receipt by other means;

3) Delivered to: *Pacific Northwest Regional Office, 333 S.W. First Avenue, Robert Duncan Plaza Building, Portland, Oregon 97204-3440* between 7:45 AM and 4:30 PM, Monday through Friday except legal holidays; or

4) Faxed to: *Regional Forester, Attn: 1570 APPEALS* at (503)-808-2339

Contacts and Additional Information

Project records are on file at the Bend/Ft. Rock Ranger District office. The Final EA and decision are also available on the internet at

<http://www.fs.fed.us/r6/centraloregon/projects/units/bendrock/index.shtml>.

For additional information concerning the specific activities authorized with this decision, you may contact:

Jim Lowrie
Interdisciplinary Team Leader
Bend/Ft. Rock Ranger District
1230 NE Third St. Suite A-262
Bend, OR 97701
(541) 383-4713

Christy McDevitt
Writer/Editor
Bend-Ft. Rock Ranger District
1230 NE Third St., Suite A-262
Bend, OR 97701
(541) 383-4725

Responsible Official

The Forest Supervisor of the Deschutes National Forest is the official responsible for deciding the type and extent of management activities in the Flank project area.

/s/ John Allen

JOHN ALLEN
Forest Supervisor
Deschutes National Forest

January 28, 2011

Date

Appendix A – Mitigation Measures & Project Design Criteria

Units	Mitigation Measures
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Units	Mitigation Measures
20, 50, 56	Units will be thinned, then mowed, and then burned when sufficient fuels have accumulated to carry a fire (within 3 years after thinning), and then burned a second time when sufficient fuels have accumulated to minimize re-establishment of Manzanita and its seed-bank. Dates: Within 3 years after thinning, and again after sufficient fuels have accumulated.
75, 76, 78	Units will be mowed before underburning to minimize scorch and mortality
Units not in MA-7 (Deer Winter Range)	Maintain a minimum of 20-30% of shrubs in a mosaic of untreated patches by using drip line burning or other methods to meet deer forage and migratory bird objectives.
1-8, 18, 73, 74, 77, 78, 67, 70-72, 17, 28, 27, 44, 45, 75, 69	Maintain a minimum of (40-50% in M7) of shrubs in a mosaic of untreated patches by using drip line burning or other methods to meet deer forage and migratory bird objectives.
Units >30% slope	Restrict mechanical disturbance on slopes greater than 30 percent to designated areas (i.e., roads, landings, designated skid trails) at all times and require operators to winch logs to skidders from these areas. Hand felled trees shall be directionally felled toward pre-approved skid trails. Exceptions for areas that make up less than 10 percent of an activity area would be subject to FS approval.
5, 7, 9, 11, 13, 16, 20, 21, 22, 23, 26, 27, 33, 34, 38, 39, 40, 41, 43, 49, 50, 55, 56, 61, 64, 65, 66, 73, 77, 80, 86	Decommission (obliterate) all temporary roads created for the current entry. Subsoil or utilize excavator bucket teeth to loosen compacted soils on all temporary roads. Pull slash and woody materials over treated surfaces to establish effective ground cover protection where available.
1, 2, 4, 7, 9, 10, 12, 14, 15, 21, 22, 33, 35, 44, 45, 53, 57, 58, 64, 65, 66, 67, 68, 71, 72, 73, 74, 75, 76, 77, 79, 87, 80, 73	<p>During operations, OHV trails east of Road 18 and north of Road 1835 will be closed in the following logical segments:</p> <p>Trail 20 from junction of trail 02 at Camp II Staging Area north to junction of trail 21, 22 or 24 dependent on location of actives.</p> <p>Trail 21 in its entirety, if 20 and 25 are closed north and south of trail 21 junctions.</p> <p>Trail 22 (Shared Use Road 450) in its entirety, if 20 and 25 are closed north and south of trail 22 junctions</p> <p>Trail 23 in its entirety, if 20 and 25 are closed north of trail 22</p> <p>Trail 25 from junction of trail 10 at Camp II Staging Area north to junction of trail 21, 22 or 26 dependent on location of actives</p> <p>Trail 27 in its entirety, if 25 is closed between 21 and 22</p> <p>Trail 28 in its entirety, if 25 is closed between 21 and 22</p> <p>Shared Use Road 940 in its entirety, if 25 is closed between 21 and 22</p>
1, 2, 4, 7, 9, 10, 12, 14, 15, 21, 22, 33,	Restrict operations that affect the OHV trails

Units	Mitigation Measures
35, 44, 45, 53, 57, 58, 64, 65, 66, 67, 68, 71, 72, 73, 74, 75, 76, 77, 79, 87, 80, 73	All trails need to stay open during this time period. Dates: Last week of April through Memorial Day
All	To protect the trail prism, equipment wider than 50" will not be used on OHV trails.
All	Roads or old skid trails that have been obliterated and converted to trails would not be used for hauling, skidding, or other treatment operations.
All	Remove all slash from trails and shared use roads in a timely manner upon completion of the payment unit. OHV trails will be clear of logging debris and maintained open when operations are not occurring.
41, 26, 39	Vehicles will avoid the cheatgrass patch associated with the corner of the tank in the SW corner of unit 41. This is an old landing and may not be used as such in future sales. The other units also have weed patches associated with them.
16, 22, 23, 39, and 44	Leave a 100 foot buffer around the water set and troughs to prevent spread of cheatgrass under all treatment methods.
NA	The Benham Falls Day Use Area is the preferred site for dust abatement water withdrawal. Any other water source proposed for this project will be evaluated for weeds by the district botanist or her designee and if weeds are found, another source may be recommended, or if possible, the site will be treated prior to use.
All units	Limit fuel treatments such as mowing and prescribed burns that may adversely affect ground nesting birds between April 15 th and July 30 th . Treatments that must occur during this time will maintain a mosaic of treated and untreated shrubs should provide some mitigation to treatment that cannot be done outside this period. This will be accomplished through maintaining 20-30% shrubs except in MA-7 where we will maintain 40-50% shrubs.
All units	Large ponderosa pine snags (>20" dbh at the large end) and large down logs (>20" diameter at the large end and 10' in length) will be protected from prescribed fire by stopping lighting within 50 feet of these features. When the burn plan is being written fuels specialist will consult the district biologist who will help locate these features and determine additional protection needs.
All units	Where vegetation treatments require a period of rest from livestock grazing a precise treatment schedule needs to be developed and the period of rest needs to be specified by treatment unit. The individual treatment unit(s), with their associated period of rest, will need to be grouped by pasture and allotment to evaluate the effect on grazing operations on the affected pasture(s)/allotment(s).
All Units	Manage treatment activities so that no more than one pasture a year would require non-use by the permittee during a given grazing season.

Units	Design Criteria & Management Requirements
All	Units will be evaluated for similar fuels conditions; underburns will use trails and roads as boundaries to reduce resource damage, and to make influential treatment at the landscape level. Underburn unit boundaries may not necessarily follow timber sale boundaries.
All	Units that are underburned may be reentered a second time if desired fuels objectives are not met with the initial prescribed fire treatment. Long term maintenance of desired fuels objectives and condition class would require additional NEPA analysis.
All	Underburning in plantations will not light around trees less than 6 inches in diameter. (TM-53)
All	Large ponderosa pine snags (>20" dbh) and large down logs (>20" diameter and >10' in length) will be protected from prescribed fire by stopping lighting within 50 feet of these features. When the burn plan is being written fuels specialist will consult the district biologist who will help locate these features and determine additional protection needs.
All	Within black bark thinning stands which have been previously thinned for 10% retention areas, use previous retention areas. (LRMP WL-59)
14, 30, 32, 47, 53, 81, 84, 88	Within Harvest Overstory Removal (HOR) units Green Tree Replacements (GTR) will be left in groups (TM-4) Retention patches and GTRs will overlap where possible. GTRs will provide 100% potential population level as directed by the Eastside Screens.
14, 30, 32, 47, 53, 81, 84, 88	During treatment activities in Harvest Overstory Removal (HOR) units advanced regeneration (trees larger than 4 ½ feet) will be protected. (TM-44 & 53)
All	Openings larger than 4 acres caused by management activities which do not contain adequate advanced regeneration will be evaluated for reforestation. An area is considered an opening when: It is wider than 250 feet and stocking is less than a stand density index of 36.5.
All	Underburning will be accomplished during conditions which will leave at least 40% crown on dominant and codominant trees. This generally should result in a crown scorch less than 50% of leave tree crowns which would reduce the potential for long-term growth loss and bark beetle induced mortality of ponderosa pine.
All	Burn piles would not be placed within heritage site boundaries, eliminating the direct effect of extreme heat on sites and artifacts.
12, 14, 16, 20, 21, 23, 32, 33, 35, 36, 39, 47, 50, 53, 56, 59, 67, 70, 75, 76, 78, 79, 80, 81 & 88	Apply restoration treatments (subsoiling) to primary skid trails and landings in order to reduce overall impacts. These units have prior entries and elevated existing detrimental conditions that are likely to need subsoiling restoration treatments of previous impacts.

Units	Design Criteria & Management Requirements
Commercial Units	Construct and maintain temporary roads to minimize the erosive effects of concentrated water during operations. Water bar temporary roads following completion of haul activities (Road BMP R-7). <i>Moderate effectiveness</i>
All	Include soil moisture guidelines in prescribed burn plans to minimize the risk of intense fire and adverse impacts to soil and water resources (LRMP SL-1 & SL-3; Timber BMP T-2, T-3 & T-13; Fuels Management BMP F-2, F-3). <i>Moderate to High effectiveness.</i>
All	Strive to maintain fine organic matter (organic materials less than 3-inches in diameter; commonly referred to as the duff layer) within each activity area during harvesting and post-harvest operations. (LRMP SL-6; Fuels Management BMP F-2; Timber Management BMP T-13). <i>Moderate effectiveness.</i>
Commercial units	In all proposed activity areas, locations for new yarding and transportation systems would be designated prior to the logging operations. This includes temporary roads, spur roads, log landings, and primary (main) skid trail networks. (LRMP SL-1 & SL-3; Timber Management BMP T-11, T-14 & T-16). <i>Moderate effectiveness.</i>
Commercial units	Maintain spacing of 100 to 150 feet for all primary (main) skid trail routes, except where converging at landings. Closer spacing due to complex terrain must be approved in advance by the Timber Sale Administrator.
Commercial units	Restrict grapple skidders to designated skid trails
Commercial units	Limit the amount of traffic from other specialized equipment off designated areas such as landings and skid trails.
Commercial units	Directionally bunch material along pre-approved skid trails, and suspend the leading end of trees during skidding operations.
All	Avoid equipment operations during times of the year when soils are extremely dry and subject to excessive soil displacement. Avoid equipment operations during periods of high soil moisture, as evidenced by equipment tracks that sink deeper than during dry or frozen conditions.
All	Minimize off trail traffic of machinery to two or fewer round trips over the same piece of ground.
23, 26, 27, 35, 37, 38, 42, 55, 56, 57, 58, 83	Prioritize areas of slope exceeding 30% for leave areas where present in planning units. Harvest will not occur on slopes exceeding 30% but if included in the planning units these areas may be designated as wildlife leave areas when conditions are favorable for hiding or cover.
Commercial Units	Restrict grapple skidders to designated areas (i.e., roads, landings, designated skid trails), and limiting the amount of traffic from other specialized equipment off designated areas. Harvester shears will be authorized to operate off designated skid trails at 30 foot intervals and make no more than two round trips on any site-specific area to accumulate materials.
All	Grapple pile only from existing skid trails or those created during yarding operations.

Units	Design Criteria & Management Requirements
All	Assure that water control structures are installed and maintained on skid trails that have gradients of 10 percent or more.
23, 26, 27, 35, 37, 38, 42, 55, 56, 57, 58, 83	Restrict mechanical disturbance on slopes greater than 30 percent to designated areas (i.e., roads, landings, designated skid trails) at all times and require operators to winch logs to skidders from these areas. Hand felled trees shall be directionally felled toward pre-approved skid trails. Exceptions for areas that make up less than 10 percent of an activity area would be subject to Forest Service approval.
All	On Ponderosa Pine sites, a minimum of 5 to 10 tons per acre of large woody debris (greater than 3-inches in diameter) is retained within activity areas to provide organic matter reservoirs for nutrient cycling that helps maintain long-term site productivity. This will also comply with Eastside Screens requirements to retain 20-40 linear feet per acre of large down woody debris (Eastside Screens Appendix B page 12).
All	Use standard contract provisions for protection of improvements to repair or replace trails, signs, road closures, fences, barriers, or other improvements that are impacted by treatment operations.
1, 2, 4, 7, 9, 10, 12, 14, 15, 21, 22, 33, 35, 44, 45, 53, 57, 58, 64, 65, 66, 67, 68, 71, 72, 73, 74, 75, 76, 77, 79, 87, 80, 73	OHV trails impacted by logging activities must be closed by OHV specialist personnel prior to logging operations. OHV specialist will install closure signs, public notification, or other actions to improve rider safety.
1, 2, 4, 7, 9, 10, 12, 14, 15, 21, 22, , 33, 35, 44, 45, 53, 57, 58, 64, 65, 66, 67, 68, 71, 72, 73, 74, 75, 76, 77, 79, 87, 80, 73	In treatment units that contain OHV trails that are not on roads, operations would leave enough trees and untreated material within 30 feet of the trail to maintain the integrity of the trail alignment and protect the "forest" experience created by the Natural environment.
All	When using OHV trails as fire lines or boundaries for burning units, offset the ignition line 30 feet from the trail and allow the fire to creep back to the trail/fireline rather than igniting adjacent to the trail.
All	To protect the integrity of the OHV trail system closed roads that have been reopened to provide unit access, or spur roads and skid trails within treatment units that cross

Units	Design Criteria & Management Requirements
	OHV trails would be ripped, blocked, or otherwise treated to deter vehicle access. This work will be done within 30 days after work is completed.
Units >20% slope	Where OHV trails pass through units that contain slopes over 20 percent, do not create open corridors during unit layout and implementation that could become hill climbs. Fall trees, place slash, rocks, or other Natural debris within and across any corridors to prevent or disrupt motorized travel.
All	Avoid trail crossing whenever possible. Require equipment to cross trails at right angles. Minimize the number of crossings with no crossings closer than 100 feet apart. Mark approved crossing locations with contractor/purchaser.
All	Remove all slash from trails and shared use roads. For commercial harvest and fuel reduction operations, removal would occur within 72 hours of completion of operations. For non-commercial operations, removal would be within 24 hours after creation. Block all skid trails and fire lines that intersect with designated trails and shared use roads. Use slash materials and other local, Natural All forest material – logs, rocks, brush, etc. – that was disturbed/displaced during operations.
All	Clean all equipment before entering and after leaving Forest Service lands. Remove mud, dirt, and plant parts from project equipment before moving it into the project area and before proceeding to the next project.
All	If fill material is proposed to be used, the botanist or her designee will inspect it for weeds prior to use.
All	Bend/Ft Rock wildlife biologist will be notified immediately of discovery of any active raptor nest.
All	Activities near known or discovered raptor nests must observe the seasonal restrictions. Restrictions will be waived if a nest is found to be inactive. Consult with the project wildlife biologist if previously undocumented raptor nests are found. Dates are as follows: Cooper's hawk April 15- Aug 31, Sharp-shinned hawk April 15-Aug 31, Northern Goshawk March 1-August 31, Red-tailed hawk March 1-Aug 31.
Dispersed throughout deer summer range units; see Figure 2.1	Hiding areas must be present over at least 30 percent of National Forest land in each implementation unit. To be suitable as a hiding area, residual clumps of one half acre or larger stands within units with advanced regeneration (trees including whips up to 7 inches diameter) and at least 12 trees greater than 7 inches per acre remaining after harvest (WL-54).
Dispersed throughout deer summer range units; see Figure 2.1	Deer hiding cover in "Black bark" ponderosa pine (50 to 80 year old stands) would be managed by retaining approximately 10 percent of treated stands in clumps that will provide visual screening throughout the area (WL-59).
1-10, 12, 16-18, 27, 28, 44, 45, 64-78	Approximately 30% of cover areas should be thermal cover (cover is a crown cover greater than 40% with trees 30 feet tall) with 10% as hiding cover. As a minimum, canopy cover must be 40 percent, but a greater canopy cover percentage is preferred.

Units	Design Criteria & Management Requirements
1-10, 12, 16-18, 27, 28, 44, 45, 64-78	There will be operational restrictions, including hauling from Dec. 1 st through March 31 st to minimize wildlife disturbance in winter range areas that overlap with the Opine project. This seasonal closure was signed as part of the Opine project and is a Green Dot Closure.
1-10, 12, 16-18, 27, 28, 44, 45, 64-78	The LRMP guidance for forage is to design treatment units to 300-500 acres including un-manipulated islands. If more than one unit is treated in a single year, treatment units should be 600 to 1,200 feet apart (M7-15).
1-10, 12, 16-18, 27, 28, 44, 45, 64-78	Burning prescriptions will provide for the reestablishment of bitterbrush within 20 years, while only 2.0-2.5% burned annually in the Paulina Herd unit
61, 44	Protect guzzlers within the project area from logging, road construction/deconstruction and prescribed fire activities including the maintenance of a vegetative buffer of at least 100 feet to maintain habitat for birds and other wildlife using the sites.
47, 75, 76, 78	Use mowing height of 6-8 inches or higher to reduce impacts to bitterbrush and improve the recovery rates to benefit mule deer and shrub-dependent migratory birds.
All	In units identified for mechanical brush treatment (mowing), the equipment would avoid known heritage site boundaries, eliminating the impacts from turning the equipment around.
20, 50, 56	In Manzanita dominated units there is no minimum height for mowing.
All	Retain at least 3-6 logs/acre >12" diameter at the small end in ponderosa pine habitats and at least 15-20 logs per acre >8" diameter at the small end in lodgepole pine habitats (Eastside Screens Appendix B page 12).
All	Develop prescribed burn prescriptions to minimize charring of logs (LRMP Standard WL-72). Fire prescription parameters will ensure that consumption will not exceed 3 inches total (1.5 inches per side) of diameter reduction in featured logs (Eastside Screens).
1, 2, 4, 5, 6, 8, 9, 27, 28, 64, 65, 67, 71, 72, 73, 74, 75, and 77	Avoid all fences when conducting mechanical shrub treatment. Protect fence or return to pre-treatment condition after harvest and fuels work is completed.
1, 2, 4, 5, 6, 8, 9, 27, 28, 64, 65, 67, 71, 72, 73, 74, 75, and 77	Wood components such as posts, corner braces, and tree scabs should be avoided and/or protected during burning operations by lining the braces and trees as needed. Leave all live trees that are part of the existing fence (wires, tree scabs, etc, attached to the tree). For fences constructed with mainly wood materials, avoidance and protection is required as these materials are subject to damage by even low intensity fires. <i>Note: Low intensity fires do not cause major impacts to metal fences or their components (barbed wire and metal fence posts). Barbed wire is discolored but is not</i>

Units	Design Criteria & Management Requirements
	<i>affected. The paint on metal posts is often burned off, but does not effectively shorten the life of the fence.</i>
All	<p>In locations of project activities using heavy equipment, direct effects on cultural resource sites would be mitigated by the project design criteria of buffering site boundaries and avoiding all direct or indirect activity within the sites. This covers all grapple piling and harvest including cable yarding, temporary road building and subsoiling, and creation of skid roads and landings. Site boundaries with an appropriate buffer (typically 30 meters) would be identified and flagged by project archeologists, their on ground locations would be provided to the project manager, and sites would be avoided by project activities. There would be no direct effects on these sites if these protection measures are appropriately implemented.</p> <p>Undiscovered and unrecorded heritage resources that are identified during project implementation would be protected until they are evaluated by the Bend-Fort Rock District Archeologist. As per contract /USFS in-house specifications, all treatment activities would cease in the vicinity of such a discovery until the archeologist completes the appropriate site assessment.</p>
22 and 74	No burning would occur on current trend (CT) plots. Protect by providing a three acre buffer centered on the actual transect. Each plot consists of a metal "T" post and from 6 to 9 metal aluminum stakes driven into the soil. Plots must be "read" prior to operations, consult with Range Specialist. Locations: (CT #5) Road 1825 T20S., R13E., Section 23, SE ¼ and (CT #6) Road 18. T20S., R14E., Section 19, SE 1/4.
All	If vegetation project activities occur during an active grazing season, any gates must be closed by contractors and administrative personnel on pastures where livestock are present.
28, 74, 65	Avoid dragging surface materials such as dirt, cinders or gravel into or over cattle guard decks or grates that would cause them to "fill-up" and require additional future work. Cattle Guard Locations: Road 1825. T20S, R13E, Section 24, NE ¼ and Road 18. T20S, R14E, Section 19, SE ¼ and Road 1830. T20S, R14E, Section 29, SW 1/4.
12, 21, 23, 38, 74(two watersets)	Protect trough & current condition of watershed sites or return to pretreatment condition after activity treatment. May require internal cooperation on timing of activities between range department & implementer (Approximately 1 acre in size). Cheatgrass (<i>Bromus tectorum</i>) may be present in disturbed zone. See specialist report for legal location of watersets.
1, 2, 4, 5, 6, 8, 9, 27, 28, 64, 65, 67, 71, 72, 73, 74, 75, and 77	Where access is needed through an existing fence by equipment, consider the following recommendations: 1) cut fence at strategic locations where there is a tree or other solid support to maintain the strength of the fence and allow for a tight fence when repaired, 2) repair all fences by the time livestock are in the area, 3) reclaim temporary roads in a manner that does not encourage the public to "re-cut" fences after treatment, and 4) schedule activities (harvesting/grazing) at separate times if at all possible.
	Conduct regular preventive maintenance to avoid deterioration of the road surface and minimize the effects of erosion and sedimentation (Road BMP R-18, R-19). <i>Moderate</i>

Units	Design Criteria & Management Requirements
	<i>to high effectiveness.</i>

Appendix B – Alternative 3 - Description of Actions and Treatments by Unit

Harvest- Commercial Thin (HTH): Commercial thinning is conducted in stands where trees over 7 inches diameter are stocked at a level where they are susceptible to bark beetle outbreaks. Commercial thinning is also used to decrease the continuity of crowns to reduce the chances of mistletoe propagation and continuity of crown fires. Commercial thinning in the Flank project will be a thinning from below which favors the largest healthy ponderosa pine. In the Flank project the level of trees left within thinning treatments is in a range from 20 to 60 square feet of basal area. The lower basal area will be used in patches of stands where stabilization of dwarf mistletoe infection levels is desired within a stand or where managing for fire and bark beetle resistance removes lodgepole pine from within ponderosa pine stands.

Mechanical harvest and accumulation would likely be accomplished using a ground-based machine equipped with a felling head (harvester shear). Felled trees would be accumulated along the main skid trail networks by the feller/buncher and then whole-tree yarded to landings using grapple skidders. Skidding equipment would be restricted to designated skid trails at all times. Machine traffic off of designated logging facilities would be limited in extent.

Harvest Overstory Removal (HOR): Harvest removal of an overstory is conducted on stands which are intended to be single story but which have an established understory of saplings or seedlings, and still retain an overstory. In the Flank project it is planned to use overstory removal in stands dominated by lodgepole pine which are stocked in the understory with seedlings and saplings. The overstory removal is also planned to remove the seed trees remaining in past shelterwood or seed tree harvests which are stocked with seedlings or saplings. Typically in these stands the remaining overstory is infected with mistletoe.

Fuels reduction activities: Machine piling, hand piling, underburning, lop and scatter and ladder fuel reduction techniques will be used to accomplish fuels management objectives after harvest activities are completed. These activities are described in the EA (pp 32, 43).

Pre-commercial thinning, whip falling and reforestation: precommercial trees are greater than 4 feet tall but have a dbh less than 7 inches. Precommercial thinning is used to regenerate stands which are now stocked with saplings and to thin an understory which is competing with an overstory and creating undesirable ladder fuels. Trees would be precommercially thinned to a spacing of 16 to 30 feet in order to increase growth rates and the probability of survival during a wildfire event. Whip falling will be used in commercially thinned units to remove non merchantable trees which are not desired due to disease or poor condition including small crowns, bole damage or very poor growth. Reforestation may be needed in stands where removal of the lodgepole pine overstory results in under stocked areas. Areas greater than 5 acres in size may require planting of ponderosa pine seedlings to ensure good stocking and dominating the regeneration with desired species.

Reforestation in these small areas will require some control of competing grass and shrubs to ensure the survival and growth of planted trees and protection from large game browse. Control of grass and shrubs will be accomplished with mowing, scarification or other manual treatment methods. No herbicide will be used.

Temporary road construction: Harvest operations are expected to require approximately 13.5 total miles of temporary road work to access units 1, 4, 7, 8, 9, 11, 13, 14, 16, 18, 19, 20, 21, 25, 26, 27, 32, 33, 34, 35, 37, 38, 40, 41, 42, 43, 48, 50, 51, 55, 56, 61, 62, 63, 64, 65, 66, 69, 73, 74, 75, 76, 77, 78, 79, 80, 85, and 86. Temporary roads are used to access further reaches of timber sale units to extract timber more efficiently and reduce ground based impacts from skidding long distances without the use of a permanent transportation system. Temporary roads are built to low specification, just enough to get equipment into landings and will be obliterated at the end of the timber sale activity.

Road maintenance & reconstruction: Approximately 24.6 miles of existing roads in the project area will require maintenance prior to use for timber haul. Maintenance includes blading and shaping of the roadbed, brush removal, ditch cleaning, reclaiming of clearing limits for site distance and adding surface aggregate.

Road decommissioning & closure: About 6.1 miles of road would be closed. Closed roads are not needed for current management, but are expected to be needed for future management activities. Closed roads could be used for administrative purposes (permit administration, fire suppression, etc.) or by permittees under permit such as for grazing. About 3.6 miles of system road would be decommissioned. Decommissioned roads are not needed for future management activities and are not used for administrative needs. Decommissioning involves removing the road from the transportation system and often includes subsoiling to make the road impassible to motorized vehicles.

Danger tree removal: Danger trees which are felled along travel routes will be left in place to provide wildlife habitat and meet coarse woody debris requirements. Danger tree reduction will follow FSM (Forest Service Manual) 7733 and Region 6 Danger Tree Policy.

Resource Protection Measures: This decision includes all resource protection measures described in the EA (EA pp 46-52). Mitigation measures and design criteria are listed in Appendix A of this Decision Notice.

Alt 3 Unit	acres	Harvest			Post Sale Treatment			Fuels Treatments				
		HTH	HSV	HOR	PCT	LFR	REF	LOP	MST	HP	MP	UB
1	13	y			y						y	y
2	42	y										y
3	23	y			y						y	y
4	31	y										y

Alt 3 Unit	acres	Harvest			Post Sale Treatment			Fuels Treatments				
		HTH	HSV	HOR	PCT	LFR	REF	LOP	MST	HP	MP	UB
5	53											y
6	35	y			y			y				y
7	102	y			y						y	y
8	57	y			y						y	y
9	128	y			y			y				y
10	22	y										y
11	46	y			y						y	
12	429	y										y
13	51	y			y						y	
14	73	y		y	y			y				
15	35	y			y						y	
16	233	y										y
17	20	y			y						y	y
18	36	y										y
19	17	y			y						y	
20	85	y							y			y
21	47	y					y	y				y
22	56	60BA +Gap			y			y				y
23	88	y										y
24	22	y			y						y	y
25	53	y										y
26	50	y			y			y				y
27	87	y										y
28	29	y			y			y				y

Alt 3 Unit	acres	Harvest			Post Sale Treatment			Fuels Treatments				
		HTH	HSV	HOR	PCT	LFR	REF	LOP	MST	HP	MP	UB
29	10	y			y						y	
30	16	y		y	y						y	
31	81											
32	25	25-30BA		y	y			y				
33	53	25-30BA			y						y	
34	9	Y, ret PICO				y		y				
35	25	60BA +Gap										y
36	20	Y, ret PICO			y			y				
37	12	y					y	y				y
38	178	y										y
39	281	y										y
40	27	y			y			y				y
41	34	y			y			y				y
42	35	y			y			y				y
43	34											y
44	134	y			y							y
45	47											y
46	15	y			y						y	
47	23	y		y	y				y		y	
48	10	y			y						y	
49	20	y			y						y	
50	68	y			y				y		y	y

Alt 3 Unit	acres	Harvest			Post Sale Treatment			Fuels Treatments				
		HTH	HSV	HOR	PCT	LFR	REF	LOP	MST	HP	MP	UB
51	56	y			y						y	
52	38	y										y
53	41			y	y						y	
54	73											
55	68	60BA +gaps										y
56	86	y							y			y
57	36	y									y	y
58	41	y			y whip			y				y
59	152	y			y whip			y				y
60	23	y			y whip						y	y
61	272	y										y
62	26	y			y whip			y			y	
63	48	y										y
64	123	y			y							y
65	81	y			y		y	y				y
66	305	y										y
67	71	y										y
68	118	y										y
69	62	y			y						y	y
70	66	y										y
71	20	y			y						y	y
72	18	y			y						y	y
73	149	y			y whip			y				y

Alt 3 Unit	acres	Harvest			Post Sale Treatment			Fuels Treatments				
		HTH	HSV	HOR	PCT	LFR	REF	LOP	MST	HP	MP	UB
74	102	y			y whip			y				y
75	13								y			y
76	9								y			y
77	164	y			y						y	y
78	5								y	y		y
79	12				y							
80	62	y			y						y	
81	19			y	y						y	
82	18											
83	42	Y ret PICO			y						y	y
84	15			y							y	
85	19	y										y
86	48	y					Plant PP				y	
87	28	y					Plant PP					
88	39	y		y							y	
sum	5343	5268		2440	2531	76	149	1131	289	5	1272	4705

HTH – Commercial Thin

HSV – Salvage Harvest

HOR – Overstory Removal

PCT – Pre-Commercial Thin

LFR – Ladder Fuel Reduction

BA – Basal Area

PP – Ponderosa Pine

LOP – Lop and Scatter Material

MST– Mechanical Shrub Treatment (mowing)

HP – Handpile

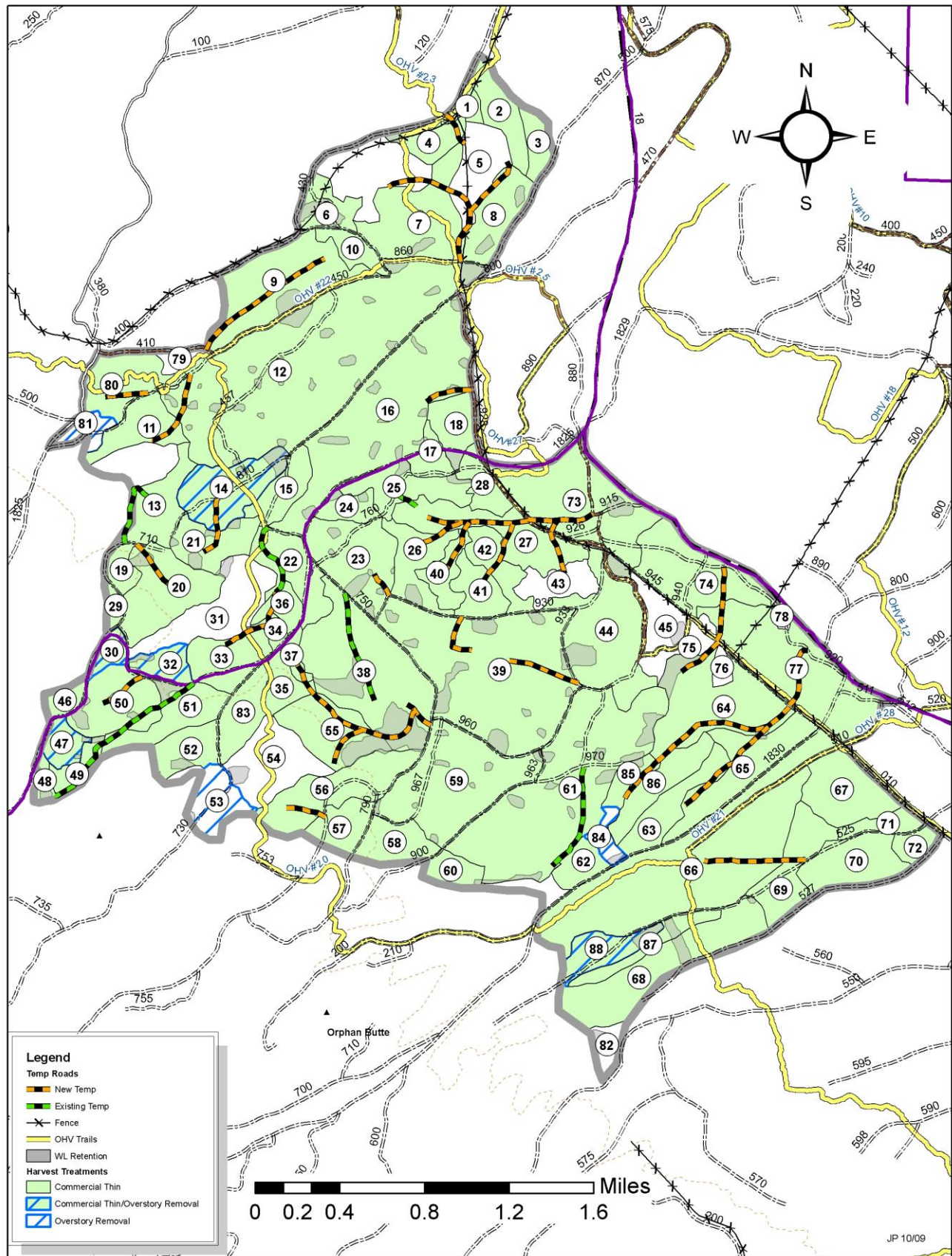
MP – Machine Pile

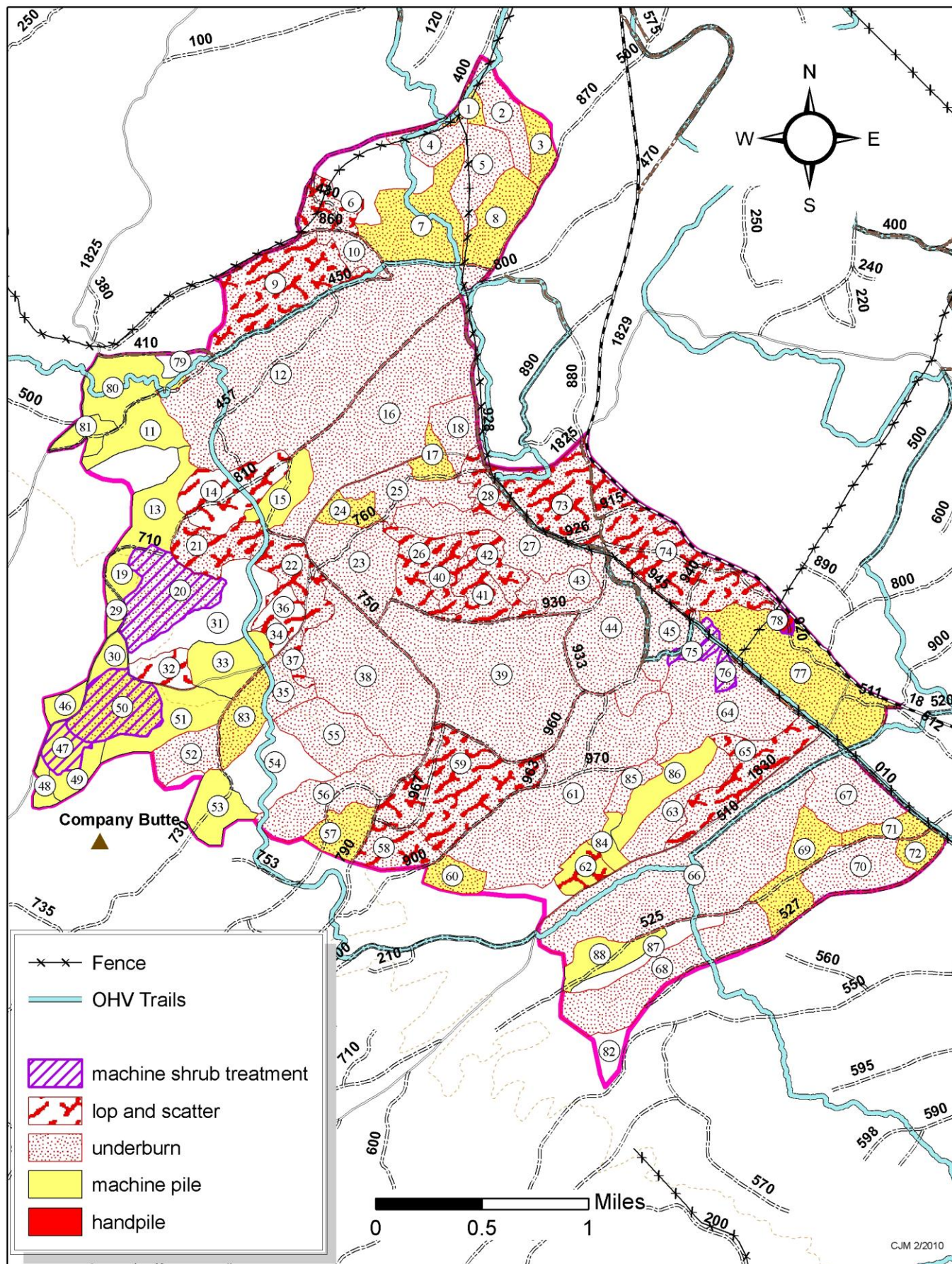
UB – Underburn

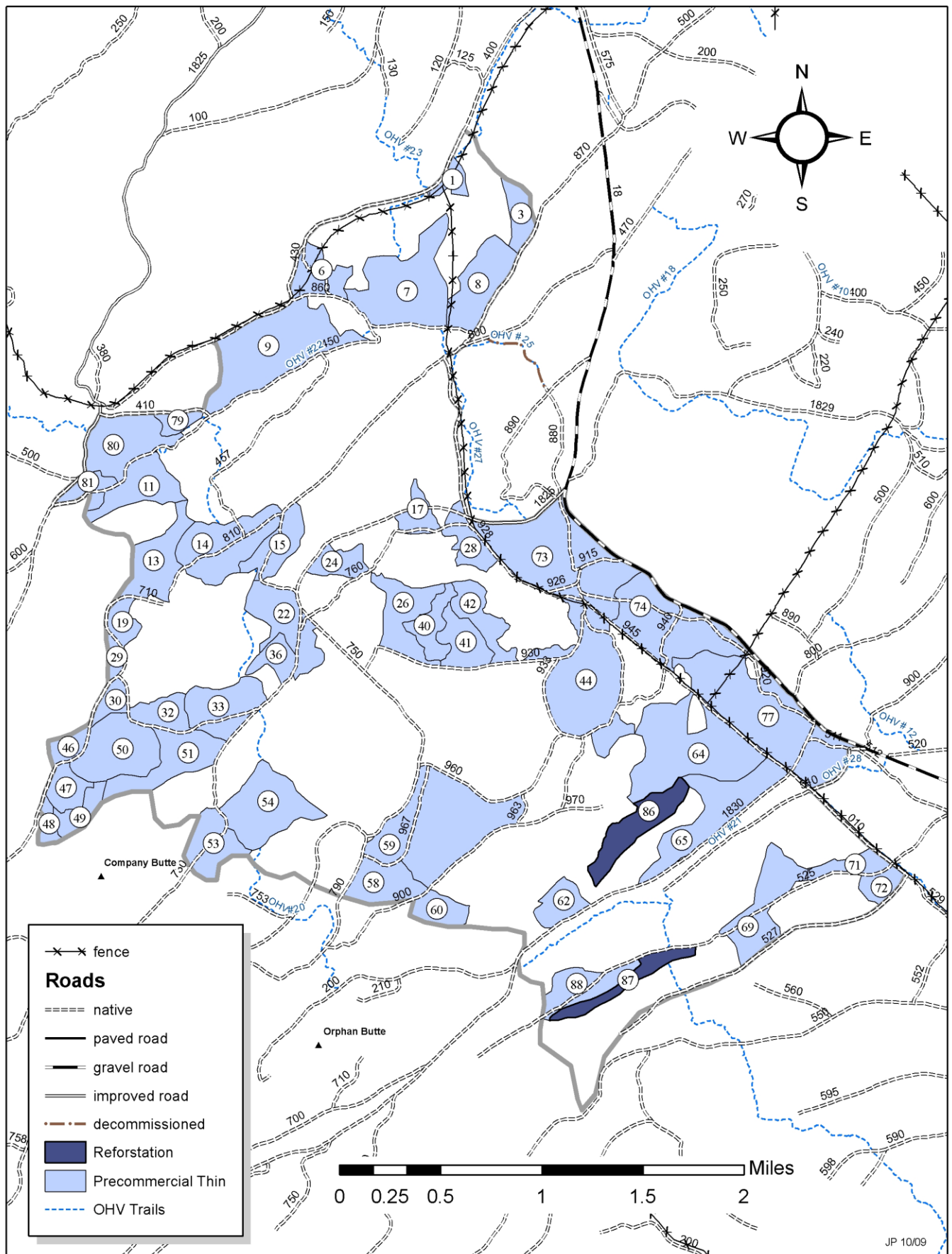
PICO – Lodgepole Pine

WHIP – Falling of small trees less than 4.5' tall

Appendix C – Alternative 3 Maps







Appendix D – Flank Response to Comments

Two written comments were received during the 30-day comment period: Oregon Wild and the Oregon Department of Fish and Wildlife. The comment letters addressed in the following response to comment.

#(1) Doug Heiken, Oregon Wild

#(2) Glen Ardt, Oregon Department of Fish and Wildlife

Comment #1 : While Alt 2 & 3 indicates there will be no change in IU 47 & 50, Table 2.7 shows hiding cover will increase in IU 50 from 22.5% to 54% by reducing hiding cover, appears to be a typo. (2)

Response to comment #1: This has been corrected in the EA (EA pp 56)

Comment #2: Hiding and thermal cover in both Alt 2 & 3 will be reduced in MA-7 including a forest plan amendment to allow this reduction below LRMP standards. I understand the need, yet I don't see where mitigation measures are described that would offset this reduction; i.e., reduce motorized road and trail densities to LRMP standards (understanding that the LRMP only addressed roads, yet research shows that trails comparably disturb big game), retain more shrub cover, punch holes and reforest (if necessary) to create cover patches, etc. (2)

Response to comment #2: Alternative 3 would reduce hiding cover in MA7 from 14% to 13% and remain above the Forest Plan Objective of 10%. Yes, thermal cover would be further reduced from 15% to 14% and remain below the Forest Plan objective of 20%, requiring a Forest Plan amendment. However, most stands are about 80 years old and the existing stands that provide thermal cover lack structural diversity contain tree-stocking levels above the historic range of variability, and most stands are experiencing bark beetle attacks.

Within the project area a total of 4 miles of decommissioning and 6 miles of roads will be closed. This would lead to a slight increase in habitat effectiveness due to moving towards a lower road density within the Tepee Draw WRHU from 4.27 miles per square mile to 4.19 miles per square mile. Trail density was acknowledged and analyzed, and was displayed separately in table 3.4.9; the proposed project would not affect or reduce any trail density.

By applying the following LRMP forage standards and guidelines, it would address the shrub cover patches stated above. The LRMP guidance for forage is to design treatment units to 300-500 acres including un-manipulated islands. If more than one unit is treated in a single year, treatment units should be 600 to 1,200 feet apart (M7-15). Burning prescriptions will provide for the reestablishment of bitterbrush within 20 years, while only 2.0-2.5% burned annually.

Comment #3: None of the Opine seasonal road closures or Green Dot Systems are associated with the Flank project area. Road improvements will occur first and will be open for the life of the project before they will be closed and decommissioned, that is if money is

available and at the end of the project after several years of use by motorized recreationists.
(2)

Response to comment #3: The LRMP suggests a minimum habitat assessment area of 3,000 acres for assessing habitat in MA7 (LRMP M7-11). The 11,673-acre Teepee Draw WRHU was used for the analysis, therefore some of the Opine seasonal road closures and Green Dot Systems are within the WRHU (Note: Approximately 1,327 total acres of the WRHU are in the Flank project area). It was disclosed that temporary roads would have a short-term disturbance effect on habitat effectiveness for the duration of the project. Motorized recreation on the temp roads is implied use. If the operational restriction from Dec. 1st – March 31st in MA 7 is compromised, then this scenario is a law enforcement issue. Section 3.12.3 Location and Size of the Forest Plan Amendment (EA pp 176) describes the analysis scales and their relationship to the Forest Plan. Effects of temporary roads and existing seasonal road closures are described under Existing Condition –Big Game—Open Roads and Motorized Trails (EA pp 115-116).

Comment #4: Part of the problem is the mix and match of IU with WRHU with the Flank project area boundary data (cover, road and trail densities). They're all at different scales, with different outcomes and interpretations of potential impacts and benefits. As an example, using the IU to evaluate road and trail densities, they will be reduced 0.01%, yet using the Flank EA project area, roads are proposed to be reduced significantly 20.70 miles reduced to 14.80 miles or 29%.

- 1) Reduction in motorized road and trail densities is important, which from table 3.9.7 (pg 162) it looks like significant miles of roads will be closed or closed and decommissioned, yet at the IU scale it is insignificant, which is the same scale that summer range cover is assessed, while winter range cover is assessed at the WRHU level. Likewise, table 3.9.7 shows existing current open road miles of 26.30, yet it shows 20.70 open road miles for post project, from which the roads proposed to be closed and decommissioned will be deducted. Where did the 6.3 miles of open roads go to?
- 2) Cover is important, particularly hiding cover. At the existing high road densities some type of cover is important to maintain habitat effectiveness. If not thermal, then hiding, and if not hiding, then shrubs across 40% of the landscape. If motorized road and trail standards can be met, then the minimum 30% cover is adequate. (2)

Response to comment #4: 6.3 miles of open road will be closed or decommissioned as described in table 3.9.6 which provides more complete information than the previous table 3.9.7 which has been omitted from the final EA. The section titled Existing Condition – Big Game – Summer Range (EA pp 113) describes forest plan direction for road density.

Forest Plan direction for cover and associated project design criteria are described under the heading, “Existing Condition –Big Game—Winter Range” (EA pp 114-115).

LRMP direction for managing deer hiding cover in summer range is to retain at least 30% of non-black bark pine stands on National Forest lands in each implementation unit (IU) (WL-54).

LRMP direction for road management in deer summer range is to apply the density as an average for an implementation unit (WL-53). The LRMP does not require the use of Implementation Units for analyzing habitat in Deer Habitat MA7, but suggests a minimum habitat assessment area of 3,000 acres (LRMP M7-11).

As part of project design, 40-50% of shrubs would be maintained in a mosaic of untreated patches during prescribed burning. The LRMP guidance for forage is to design treatment units to 300-500 acres including un-manipulated islands. Additional shrub recommendations are found in the Deschutes National Forest Integrated Natural Fuels Management Strategy (INFMS USDA 1998). The desired condition, as stated in the INFMS for bitterbrush habitats in the planning area is to have a ratio of 1/3rd in early seral, 1/3rd in mid seral, and 1/3rd in late seral (late and decadent) habitats.

Comment #5: We object to the small scale and extent of untreated skips in the project area. The scale and extent of untreated skips should be increased in order to mitigate for reduced carbon storage, reduced recruitment of dead wood, reduced habitat for species that prefer dense forests, reduced big game cover, etc. Untreated areas are more important than the FS realizes and we can often obtain multiple benefits by locating untreated skips in areas that are inaccessible from roads (so we can avoid the effects of road construction and get the benefits of Natural mortality processes). Thinning too large a fraction of the landscape begins to look like "large tree farming" rather than ecological restoration. Healthy forests must have abundant dead trees and dense patches. (1)

Response to comment #5: There are multiple scales in which to view the project. Due to the relatively small size of the project itself (<6,000 acres), the untreated areas surrounding the project are currently large, and while some of these areas may be treated under other projects such as Opine, only a small percentage of the forest is treated annually. It is important to view the project from a landscape scale. Numerous authors have suggested that historical conditions in similar ponderosa pine forests would have been dominated by open, park-like forests of big trees (300-500 years old), with small patches of denser regeneration and shrub-dominated openings scattered throughout. These patches would have been variable in size. Goshawks, Cooper's hawks, and Sharp-shinned hawks use nest stands that are characterized by high canopy closure and tree densities. Reynolds 1983 states that goshawk nest stands are approximately 20 acres, Cooper's hawk nest stands are 15 acres, and sharp-shinned hawk nest stands are 10 acres. Within goshawk foraging areas, Reynolds et al. 1992 recommend a fine scale mosaic of patches 0.1 to 2 acres in size. For mule deer, in non-black bark stands, the LRMP defines hiding cover as stands 6 acres or larger while Olson 1992 recommends patch sizes of 10-30. Germaine et al. 2004 recommends patches >0.1 acres for mule deer foraging and day-bedding patch sizes ranging from less than 1 acre to 81 acres in size. This should provide suitable habitat conditions for a variety of species. Within the project area itself, retention areas are of a variety of sizes. Under both Alternatives, the largest untreated area is 81 acres, and under Alternative 3, there is an additional 73 acre leave area. Additional wildlife retention areas will total at least 10% of each commercial thinning unit and will vary in size. All commercial thinning stands are blackbark stands.

Comment #6: The EA (p 106) is misleading because it says that large snags remain below S&Gs under all Alternatives, but it does not show that things are worse under the logging

Alternatives and this adverse effect would last far beyond 30 years and this adverse effect would be mitigated with greater retention of untreated skips.

The EA (p 111) is also misleading when it says that logging would be beneficial to large snags and woodpeckers by growing big trees faster. The EA fails to acknowledge that logging will significantly reduce the pool from which future snags are recruited and would produce too few of the large snags that are purported to be created. A numeric analysis (not shown in the EA) would show that the trade-off between snag size and snag numbers as a result of logging is very unfavorable to woodpeckers and other wildlife.

Response to comment #6: Ponderosa pines can live to be hundreds of years old, and the majority of the trees within the proposed project area are relatively young (<150 years old).

Modeling shows the average diameter of trees is currently below 10 inches (EA p 78). Without treatment tree average diameters for the area will remain below 15" dbh for the next 30 years. Thinning can cause trees to grow faster than 1.5" per decade for the next 30 years. Modeling shows treatment would result in more trees per acre greater than 20 inches in diameter than could be expected under the no treatment option (EA pg. 77). Fire, insects, weather are still present following the planned treatments and these factors would continue to recruit snags in these stands. Untreated areas to recruit small snags will still be present on at least 10% of the units where bark beetles will be the dominant mortality factor.

The proposed action Alternatives are intended to reduce stress on these trees, making them less likely to die from insects, disease, and fire. The oldest age class of trees cannot be quickly replaced and will take hundreds of years to develop under all 3 Alternatives. Without fire, the action Alternatives will have fewer snags due to increased forest health—healthier trees are less likely to die. It appears that the figures from the Holland Moonsalt EA do not include fire (either prescribed or Natural). Some of these trends would likely be similar in our project area in the absences of fire. Historically, however, fire was an important component of this landscape, with fire return intervals of 4-24 years suggested by Bork 1984, and to estimate future snag abundances without fire included in the model would be somewhat misleading. The adjacent 1988 Paulina fire burned over 12,000 acres, over twice the size of this project area. Under the No Action Alternative, fire would be likely to create a large number of snags across a large area should a stand-replacement fire occur. This would then be followed by many years of very low snag recruitment—the existing snags would fall, and there would be few remaining large trees to create new ones. With the action Alternatives, stand-replacement fires are likely to be on a smaller scale. Dense patches of snags created by stand-replacement fire will be smaller, with more surviving trees in the matrix to provide future snags over time.

Within the project area, an HRV analysis (EA pp 73) shows that historically approximately 10% of the project area would have been dominated by multi-story forest with large trees and 55% would have been dominated by single story forest with large trees. Currently 0% of the project area is in these mature forest conditions, while mid-seral conditions are over-represented. Species such as Lewis' woodpeckers, white-headed woodpeckers, and flammulated owls which require larger structure and more open forests are among the species of greatest conservation concern in NatureServe. Altman 2000 recommends thinning and prescribed fire as part of the conservation strategy for landbirds in ponderosa pine systems, with white-headed woodpeckers listed as one of the top focal species. Although there is no old-growth lodgepole pine habitat in the project area, there is lodgepole pine, and Altman 2000 also recommends against salvage logging in these stands. Alternative 3 is consistent with this recommendation although Alternative 2 is not.

Comment #7: We are concerned about goshawk treatments, because the goshawk and many other wildlife prefer dense forests with complex structure and abundant dead wood. Logging will likely reduce the quality of habitat for such species and their prey. (1)

Response to comment #7: Under Alternative 3, the treatments within the PFA were specifically designed to benefit goshawks as per Youtz et al., 2007. The effects of treatment on goshawks is discussed on page 121 in the EA. Different species are adapted for different forest conditions. Species such as Lewis' woodpeckers, white-headed woodpeckers, and flammulated owls require more open, large structure; sharp-shinned hawk and Cooper's hawk nests are associated with higher density small diameter forests; and goshawks nests are associated with forests of larger trees and a dense understory. On a landscape scale, all of these species can use the same forest, but individual stands will not be appropriate for all species simultaneously. Instead, by creating heterogeneity across the landscape and through time, we can ensure that different stands of forest will be available for different species. Across the larger landscape of ponderosa pine forests, old-growth and mature forest structure is limited, while mid-seral (or black-bark ponderosa pine) is currently over represented (EA pp 73). Logging in selected areas is intended to increase the amount of mature structure forest. Prescriptions are also intended to create small openings for early-seral structure to develop (and subsequently mid-seral structure over time), areas with mid-seral structure will also be retained, but at a reduced level.

Comment #8: We are concerned about long-term recruitment of large trees and continuous recruitment of large wood. Logging tends to interfere with Natural mortality processes and the Natural carbon cycle. We hope the FS continues to improve its planning and rationale for restoration projects where large amounts of wood are moved from the forest thus truncating mortality processes and large wood accumulation. (1)

Response to comment #8: Within the Flank project, stands will be returned to more historical level of stocking thus increasing growth and decreasing the current densities of stands. Stocking at historic levels does not preclude Natural mortality agents from acting within the stand. Mortality agents such as weather, lightning, bark beetles, fire, mistletoe stress and old age will still be present. As the stands become dominated by trees larger than 16 inches in diameter, the bark beetle mortality should shift from mountain pine beetle to western pine beetle. This shift to a different agent would be similar to the historical mortality causes. The high density mortality associated with mountain pine beetle is currently dominating stand dynamics.

Comment #9: It is important to retain generous untreated skips throughout the project area to mitigate for captured mortality processes, and to mitigate for the loss of habitat for species that prefer dense forests and to provide big game hiding cover. (1)

Response to comment #9: While some species utilize dense forests, others, such as the white-headed woodpecker on the Regional Forester's list of sensitive species, require more open conditions. Open structure, old-growth ponderosa pine is currently deficient across the landscape, and species dependent on these conditions, such as white-headed woodpeckers,

are especially at risk. Within the Flank project at least 15% of the area will be left untreated. Fifteen percent is similar to levels of untreated areas present in the closed canopy and stand reinitiation phases estimated in the historical reference condition. Landscape restoration is focused on whole landscapes being brought back to the historical levels of stand structure. Leaving more areas dense would not meet this desired condition. The forest in the Flank project area is east side dry ponderosa pine and not west side Douglas fir dominated stands. Fire, insects, drought, and weather play an important role in developing these stands in more open condition than Naturally found in more moist environments. Treatments are intended to move the project area toward historical reference conditions.

Comment #10: The figures showing average diameter are neat but to reveal a clearer picture, the EA should also disclose the effects on forest density and loss of snag recruitment. Comment included example figures. (1)

Figure 19. Short and Long Term Changes to $\geq 20"$ dbh Snags (Snags/Acre by Year)

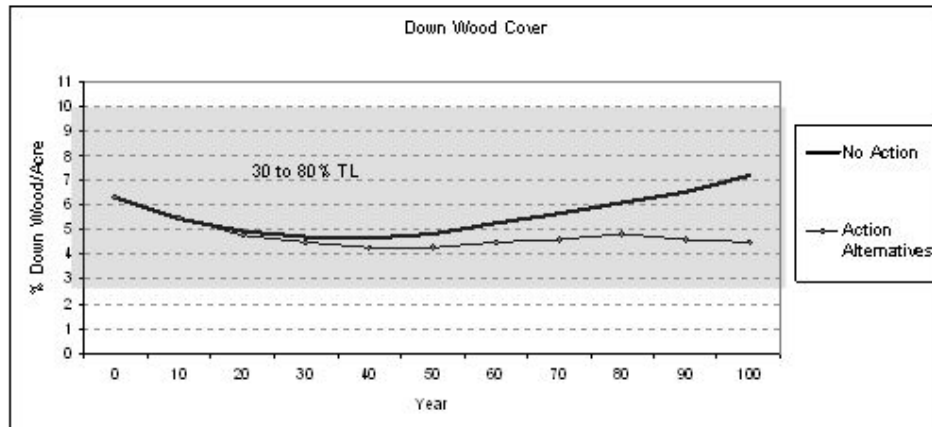


Figure 20. Short and Long Term Changes to $\geq 6"$ Diameter Down Wood

Response to comment #10: The EA for Flank project shows the estimated tree sizes and densities. Effects of snag and downed wood supply are described in the EA on pages 76 and 78 as well as 103-109. These pages identify the risk to mortality from beetles and fire. Since these events are stochastic and cannot be easily predicted modeling captured mortality has been addressed by beetle and fire risk. Snag levels were modeled to give an estimate of what may be available over the decades. The sheer number is not an indicator of the total desired habitat. Historically snags in the open dry ponderosa pine type were random and few, or stochastic and numerous. Models estimate tree mortality mathematically but based on stocking levels. Models do not estimate clearly the methods of mortality. With fire, mistletoe stress, drought stress, bark beetles and weather more methods of mortality are present for all stands dense or open. Mathematical estimates of density related mortality are those present in models and not similar to the low density open stands found in the dry ponderosa pine type. The mortality vectors in the ponderosa pine are not only dependent on density, as in more moist sites, but the inherent rough living conditions of the dry pine type.

Comment #11: Why is the FS willing to do a numeric analysis of future tree diameter but not similarly display snag numbers and sizes? These are very important and relevant impacts because the EA says that snag numbers are below desired levels for several decades to come. Maybe this can be mitigated with more and large untreated skips.

Response to comment #11: References to untreated areas are described in the response to comment # 10. Snag numbers are inventoried but snag creation is largely dependent on stochastic events that are difficult to predict. The level of risk posed by insect and disease are among the best indicators we have to model rates of snag creation.

Comment #12: The EA should not rely on outdated and inadequate LRMP requirements such as the current snag and GTR standards. Current direction for snags and green tree retention for future snags is not adequate to maintain viable populations or DecAID tolerance levels over the life of the stand. This needs to be disclosed.

Response to comment #12: We are required to follow our forest plan direction at a minimum. We also did an assessment of the existing snag levels using the current best available science as summarized by DecAid. Different species of wildlife require snags of different sizes, densities, and levels of decay. Large snags will remain low across the landscape under all three Alternatives. Smaller snags will increase most rapidly in untreated areas, but numerous small snags are not beneficial for all species of wildlife. Under the action Alternatives, dense retention patches will provide snag habitat for species such as black-backed woodpeckers, while thinned areas will be moved towards conditions more appropriate for species such as white-headed woodpeckers. Due to site conditions within the project area, historically the project area would have had supported a relatively low density of snags.

Comment #13: In principal we like the idea of enhancing existing diversity by thinning areas that are already less dense and retaining higher density in areas that are already dense. This is a great way to increase landscape diversity (especially if applied across large landscapes), but this might not be an appropriate focus on the subset of the landscape that is goshawk post-fledging areas where retaining more density should take priority.

The FS's approach to managing goshawk habitat might have a scale problem. If the goal of the Youtz report is to restore landscape level processes, then it may be approach to protect areas around nests while focusing treatments on the matrix between nests. If the FS is only apply the treatments to the post-fledging areas then they may be increasing disturbance in the very area that should be more carefully conserved. Note the spotted owl recovery plan also calls for restoring landscape processes but they say that density reduction treatments should focus on the portion of the landscape and is non-NRF habitat. Similarly here, the FS might want to retain more density for goshawks while treating other parts of the landscape to attain spatial discontinuity of fuels (if that is considered necessary here). (1)

Response to comment #13: Within the project area there is currently one known nesting pair of goshawks, and fledglings have been confirmed in both 2009 and 2010. The current habitat conditions are therefore appropriate for goshawks. One option therefore, is to leave the area undisturbed, however, forests are constantly changing. Lack of management would

not result in an unchanged forest, but may instead result in an even greater habitat change. The Paulina fire burned adjacent to the project area in 1988, completely eliminating a known nest site. Thinning within the PFA is proposed as a way to maintain goshawk habitat in the long-term. Under Alternative 3, our prescriptions are specifically intended to protect both current and future goshawk habitat. Moser and Garton 2009 evaluated goshawk habitat use following timber harvest in Idaho. They found that “goshawk breeding area re-occupancy was a function of the amount of potential nesting habitat available in the 170-ha (420 acre) area surrounding the nest; goshawks reoccupied breeding areas if they contained >39% potential nesting habitat following harvest.” 39% of 420 acre is 164 acres. An 81 acre core nest area and 589 acre PFA were designated. Under Alternative 3, 2 units (154 acres) will remain completely untreated. 3 units (150 acres) will be thinned, but a higher density than the rest of the project area will be retained. Additionally, 10% of all stands will be retained as leave areas. 2 units (78 acres) will be thinned to a lower density than most of the project area, with the remaining units receiving the same thin treatment as the rest of the project area.

Alternative 2, however, will maintain only 1 unit as untreated (81 acres), and 10% of the surrounding PFA would remain untreated. This may not maintain 39% as potential nesting habitat, and is more likely to be detrimental to the goshawks.

Under all Alternatives, monitoring is recommended to evaluate the effects of treatments on nesting success, and to inform future management decisions.

Comment #14: Is the Youtz report for the SW applicable in the NW? What considerations went into transferring this analysis from 1000 miles away? The Northern Spotted Owl uses habitat differently within its range and the goshawk may also have different habitat relationships here compared to the Arizona and New Mexico.

Response to comment #14: A large amount of research on goshawks in ponderosa pine habitats has been done in the Southwest, but studies in the inland Pacific Northwest, although more limited, appear to suggest similar habitat use and habitat relationships. In particular, DeStefano et al. 2006 recommend “that the existing management guidelines for goshawks in the Southwest form a basis for management in the inland Pacific Northwest.” This recommendation is based off of research conducted in the 1990s in eastern Oregon and Washington.